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10/629,456	07/29/2003	James B. Armstrong	007412.00288	7320

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EXAMINER
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STOKELY-COLLINS, JASMINE N

ART UNIT	PAPER NUMBER
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2423

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/629,456

**Applicant(s)**

ARMSTRONG ET AL.

**Examiner**

JASMINE STOKELY-COLLINS

**Art Unit**

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-13 and 15-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-13 and 15-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 04/13/09 have been fully considered but they are not persuasive.

Regarding claims 1 and 11, applicant argues on page 6 of his arguments that Mendelson's protocol data units do not represent a fixed length of time, and therefore cannot be equated to the applicant's claimed extents. The examiner disagrees; While Mendelson alone does not teach the PDU representing a fixed length of time, Neel (col. 22, ll. 58-59) teaches that an ATM packet may contain data representing a fixed amount of time. Mendelson states, in col. 4 ll. 54-63, that a PDU is made of 8 ATM cells. When combined with Neel's teaching that the content of an ATM cell can be adjusted to represent a fixed amount of time, one of ordinary skill in the art would recognize that a PDU made of ATM cells could in turn represent a fixed length of time.

Applicant's newly added claims 21 and 22, newly cited US Patent 5,533,021 to Branstad teaches that a TS packet stream comprises a multiplexed stream of video and audio (fig. 3, col. 5 ll. 39-46). The multiplexed stream is then packed into AAL5 PDUs, such as those used in Mendelson, with every 2 successive TS packets making a PDU (see fig. 6). A PDU may contain both video and audio, and the unique content identifier taught by the ISO standard would result in the unique content identifier identifying both the video and audio content because they are part of the same stream (and therefore will have the same stream id).

Applicant's argument that prior art references are not part of an obviousness-type double patenting rejection is incorrect. MPEP § 804 (II)(B)(1) states:

“A double patenting rejection of the obviousness-type>, if not based on an anticipation rationale,< is ‘analogous to [a failure to meet] the nonobviousness requirement of 35 U.S.C. 103’ except that the patent principally underlying the double patenting rejection is not considered prior art. *In re Braithwaite*, 379 F.2d 594, 154 USPQ 29 (CCPA 1967). Therefore, \*>the<analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination. *In re Braat*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985).

Since the analysis employed in an obviousness-type double patenting determination parallels the guidelines for a 35 U.S.C. 103(a) rejection, the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are employed when making an obvious-type double patenting analysis. These factual inquiries are summarized as follows:

- (A) Determine the scope and content of a patent claim relative to a claim in the application at issue;
- (B) Determine the differences between the scope and content of the patent claim as determined in (A) and the claim in the application at issue;
- (C) **Determine the level of ordinary skill in the pertinent art;** and
- (D) Evaluate any objective indicia of nonobviousness. “

Determining the level of ordinary skill in the art includes considering what is disclosed by the prior art (i.e. what is disclosed by a sampling of inventors of ordinary skill in the art) and it is commonplace to use prior art as a secondary reference in a obviousness-type double patenting rejection (see form paragraph 8.36, shown in MPEP § 804 (II)(B)(1)(b)).

### ***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

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from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 3, 5, and 7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4, 6, and 9 of U.S. Patent No. 6,604,224 in view of Mendelson et al (US 5,561,791) and the ISO/IEC 13818-1 Standard. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the claims of the instant application and the Patent claims are almost identical in scope, with the exception that the Patent's claims are system claims and the instant application's claims are method claims. It would have been obvious to one of ordinary skill in the art to modify the system claim of the Patent to be a method claim in order to obtain a method for the system claim of the patent.

Claim 1 of the Patent claims all the limitations set forth in the instant claim 1 except for the extent data comprising a plurality of packets, unique content identifier, logical extent number, and a circular redundancy check. The instant claim also recites "each extent including a plurality of packets that contain information for presentation within the fixed length of time".

Mendelson teaches extents (protocol data units, column 5 lines 54-58) comprising a plurality of content data packets (cells, column 5 lines 55-58) for storing content portions. It would have been obvious to one of ordinary skill in the art at the time the invention was made to divide the extents of patent claim 4 into smaller cells in order to allow the packets to be transported in an asynchronous transfer mode (ATM) network, which is widely used in the art. It would also have been obvious to store the content portions of the Patent claim 1 in packets for transport across the distribution network, as is widely used in the art, for the benefit of having a mechanism to keep the content portions separate during transportation.

The ISO/IEC 13818-1 Standard teaches a unique content identifier (stream id, page 36), a logical extent number (program packet sequence counter, page 43), and a circular redundancy check (previous packet CRC, page 42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the content identifier of patent claim 4 unique in order to easily differentiate streams, to use a CRC as the check field recited in patent claim 4 in order to employ a commonly used data checking technique, and to use a logical extent number as the analogous content sequence number field recited in claim 4 for the benefit of tracking and maintaining the order of packets in stream.

Claim 3 of application 10/629,456 corresponds to claim 4 of US Patent No. 6,604,224 B1.

Claim 5 of application 10/629,456 corresponds to claim 6 of US Patent No. 6,604,224 B1.

Claim 7 of application 10/629,456 corresponds to claim 9 of US Patent No. 6,604,224 B1.

Allowance of application claims 1, 3, 5, and 7 would result in an unjustified time-wise extension of the monopoly granted for the invention defined by patent claims 1, 4, 6, and 9. Therefore, obviousness-type double patenting is appropriate.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 5-8, 11, 13, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendelson et al (US 5,561,791) in view of the ISO/IEC 13818-1 Standard, and Neel et al (US 5,838,314).

Regarding claim 1, Mendelson teaches a method for providing content-on-demand (abstract), comprising:

dividing a content stream in to a plurality of extents (protocol data units, column 5 lines 54-58), each extent including a plurality of packets (cells, column 5 lines 54-58); and  
associating with each extent a trailer (column 5 lines 59-61).

Mendelson does not teach the specific fields of the trailer, however he states the trailer information is used to decompose the protocol data units into TS packets.

The ISO standard teaches TS packets include PES header information ("The first byte of each PES packet header is located at the first available payload location of a Transport Stream packet" page 11 section 2.4.1). ISO further teaches PES headers comprise a unique content identifier (page 36 "stream id"), a logical extent number (page 43 "program packet sequence counter"), a track-type identifier (page 40 "trick mode control" and page 38 "DSM trick mode flag"), and a circular redundancy check (page 42 "previous packet CRC"). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the PES header fields taught by ISO into the protocol data unit (PDU) taught by Mendelson for the benefit of having all the necessary information to reconstruct a TS packet that is in accordance with the widely accepted ISO standard for MPEG systems.

Mendelson in view of ISO does not teach the packetized information is appropriate to a temporal period represented by each extent.



Neel teaches that an ATM packet may contain data representing a fixed amount of time (column 22 lines 58-59). Mendelson states, in col. 4 ll. 54-63, that a PDU is made of 8 ATM cells. When combined with Neel's teaching that the content of an ATM cell can be adjusted to represent a fixed amount of time, one of ordinary skill in the art would recognize that a PDU made of ATM cells could in turn represent a fixed length of time (where the fixed length of time of an extent would illustratively be {the amount of video of one ATM cell x the number of ATM cells in the extent = 5 seconds x 8 ATM cells per Mendelson's PDU = 40 seconds worth of video}). It would have been obvious to one of ordinary skill in the art at the time the invention was made to divide the audio and video extent data into temporal periods for the benefit of simplifying the synchronization of corresponding audio and video data packets during decoding. In this combination, the temporal period would be chosen such that the amount of data would optimally fit in each PDU with minimal stuffing required.

Regarding claim 3, when read in light of claim 1, ISO further teaches transmitting said plurality of extents of said content stream to at least one subscriber terminal in response to a request for content (page 87 section A.0.2 states that video programs are provided as requested by a customer in a video-on-demand system).

Regarding claim 5, when read in light of claim 1, ISO further teaches the logical extent number ( program packet sequence counter) provides a number indicative of a relative position of the extent with respect to other extents of said content stream (definition of program packet sequence counter “It is an optional counter that increments with each successive PES packet from a Program Stream or from an ISO/IEC 11172 System Stream or the PES packets associated with a single program definition in a Transport Stream, providing functionality similar to a continuity counter” page 43).

Regarding claim 6, when read in light of claim 5, ISO further teaches each said logical extent number is sequentially numbered within said content stream (definition of program packet sequence counter “It is an optional counter that increments with each successive PES packet from a Program Stream or from an ISO/IEC 11172 System Stream or the PES packets associated with a single program definition in a Transport Stream, providing functionality similar to a continuity counter” page 43).

Regarding claim 7, when read in light of claim 1, ISO further teaches said track-type (trick mode control) identifier comprises indicia of a type of track selected from the group consisting of a play track (indicated by trick mode flag set to 0 which sets trick mode status to false, as described on page 20 under

Trick Mode), a fast-forward track, and a reverse-play track (fast reverse and slow reverse) (page 40 under trick mode control definition and Table 2-21).

Regarding claim 8, when read in light of claim 1, ISO further teaches performing a circular redundancy check (CRC) operation on said plurality of packets during initial formation of said extent data (page 42 teaches calculating a CRC value for a data packet and including it in the header).

Regarding claim 11, Mendelson teaches an apparatus for providing content-on-demand (figure 1 element 110: video server) comprising: means (figure 1 elements 114 and 700: encoder and transport controller) for dividing a content stream in to a plurality of extents (protocol data units, column 5 lines 54-58), wherein each extent includes a plurality of packets (cells, column 5 lines 55-58); and means (figure 1 element 114: encoder) for associating a trailer (column 5 lines 59-61) with each extent.

Mendelson does not teach the specific fields of the trailer, however he states the trailer information is used to decompose the protocol data units into TS packets.

The ISO standard teaches TS packets include PES header information ("The first byte of each PES packet header is located at the first available payload location of a Transport Stream packet" page 11 section 2.4.1). ISO

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further teaches PES headers comprise a unique content identifier (page 26 “stream id”), a logical extent number (page 43 “program packet sequence counter”), a track-type identifier (page 40 “trick mode control” and page 38 “DSM trick mode flag”), and a circular redundancy check (page 42 “previous packet CRC”).

Mendelson in view of ISO does not teach the packetized information represents a fixed length of time and comprise information for presentation within the fixed length of time.

Neel teaches packetized extents (video contents) that each contain a specified temporal period of five seconds (column 22 lines 58-59).

Regarding claim 13, when read in light of claim 11, Mendelson further teaches means (video server) for transmitting said plurality of extents of said content stream to at least one subscriber terminal in response to a request for content (column 1 lines 18-19).

Regarding claim 15, please see analysis of claim 5.

Regarding claim 16, please see analysis of claim 4.

Regarding claim 17, please see analysis of claim 7.

Regarding claim 18, please see analysis of claim 8.

5. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendelson et al (US 5,561,791) in view of the ISO/IEC 13818-1 Standard and Neel et al (US 5,838,314), and further in view of Mourad (US 5,678,061).

Regarding claim 2, when read in light of claim 1, Mendelson in view of ISO and Neel teaches the method of claim 1.

Mendelson in view of ISO does not teach striping said plurality of extents of said content stream across a plurality of disk drives.

Mourad teaches striping said plurality of extents of said content stream across a plurality of disk drives (column 1 lines 44-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the striping method taught by Mourad to store the extents taught by Mendelson in view of ISO for the benefit of providing a storage system that is less affected by the failure of a disk.

Regarding claim 12, when read in light of claim 11, Mourad further teaches means (figure 1 element 25: host processor) for striping said plurality of extents of said content stream across a plurality of disk drives (column 4 lines 27-32).

6. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendelson et al (US 5,561,791) in view of the ISO/IEC 13818-1 Standard and Neel et al (US 5,838,314), and further in view of Ghodrat et al (US 6,717,947 B1).

Regarding claim 9, when read in light of claim 8, Mendelson in view of ISO and Neel teaches the method of claim 8. Mendelson does not teach replacing corrupted packets with replacement packets in an instance where said CRC operation identifies said corrupted packets.

Ghodrat teaches replacing a corrupted extent data with a replacement extent data in an instance where said CRC operation identifies said corrupted extent data (column 2 lines 61-64, column 9 line 63- column 10 line 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace corrupted data, as taught by Ghodrat, in the extent data taught by Mendelson in view of ISO for the benefit of maintaining data integrity.

Regarding claim 19, please see analysis of claim 9.

7. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendelson et al (US 5,561,791) in view of the ISO/IEC 13818-1 Standard and Neel et al (US 5,838,314), and further in view of Anderson et al (US 6,275,507 B1).

Regarding claim 10, when read in light of claim 8, Mendelson in view of ISO and Neel teaches the method of claim 8.

Mendelson in view of ISO does not teach masking a corrupted packets in an instance where said CRC operation identifies a corrupted packets.

Anderson teaches masking a corrupted packets in an instance where said CRC operation identifies a corrupted packets (column 11 lines 39-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Anderson's teaching of masking corrupted data for the benefit of preserving the quality of data.

Regarding claim 20, please see analysis of claim 10.

8. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendelson et al (US 5,561,791) in view of the ISO/IEC 13818-1 Standard, and Neel et al (US 5,838,314), and further in view of Branstad et al (US 5,533,021).

Regarding claim 21, when read in light of claim 1, Mendelson in view of ISO and Neel teaches the method of claim 1.

Mendelson in view of ISO and Neel does not teach the unique content identifier identifies content that contains both audio and video.

Branstad teaches that a TS packet stream comprises a multiplexed stream of video and audio (fig. 3, col. 5 ll. 39-46). The multiplexed stream is then packed into AAL5 PDUs, such as those used in Mendelson, with every 2

successive TS packets making a PDU (see fig. 6). A PDU may contain both video and audio, and the unique content identifier taught by the ISO standard would result in the unique content identifier identifying both the video and audio content because they are part of the same stream (and therefore will have the same stream id). It would have been obvious to one of ordinary skill at the time the art was made to include both audio and video in a single PDU for the benefit of allowing an audio/video transport stream to be packed into PDUs and transmitted to a user without the added step of rearranging the packing order of the stream (to keep audio and video information from being packed together). In this arrangement, a stream can be packed into PDUs in the order in which the packets arrive.

Regarding claim 22, when read in light of claim 11, please see analysis of claim 21.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any



extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASMINE STOKELY-COLLINS whose telephone number is (571) 270-3459. The examiner can normally be reached on M-Th 9:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Koenig can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jasmine Stokely-Collins/  
Examiner, Art Unit 2423

/Andrew Y Koenig/  
Supervisory Patent Examiner, Art Unit 2423